535/2&3
PHYSICS
Paper 2&3
2024
2 hours

UGANDA NATIONAL EXAMINATIONS BOARD

Uganda Certificate of Education

PHYSICS

Paper 2 & 3
Practical

2 hours

INSTRUCTIONS TO CANDIDATES:

This paper consists of two examination items.

Answer **one** *item in all.*

Any additional items answered will ***not*** *be scored.*

Candidates are **not** *allowed to start working with the apparatus for the* **first quarter of an hour**. *This time is to enable candidates; read the items thoroughly, checking for the apparatus they will need and plan appropriately.*

A graph paper will be provided.

Mathematical tables and silent non-programmable calculators may be used.

 Turn Over

Item 1

In a certain trading centre, empty mineral water bottles were littered everywhere causing blockage of trenches and other environmental hazards. A trader came to the trading centre with the intention of buying empty water bottles of mass 15 g each. A student had gathered a pile of 20000 empty identical mineral water bottles (500 ml each) but was not sure about the mass of each bottle. There was no instrument to determine the mass of the bottles and the student did not know the amount of money to be earned from the sale of the bottles.

Task:

As a student of physics, carry out a scientific investigation to help the student determine the mass of an identical empty bottle provided to you in order to ascertain how much the student will earn.

Hint:

✓ The trader pays UGX.400 per kilogram of such bottles.

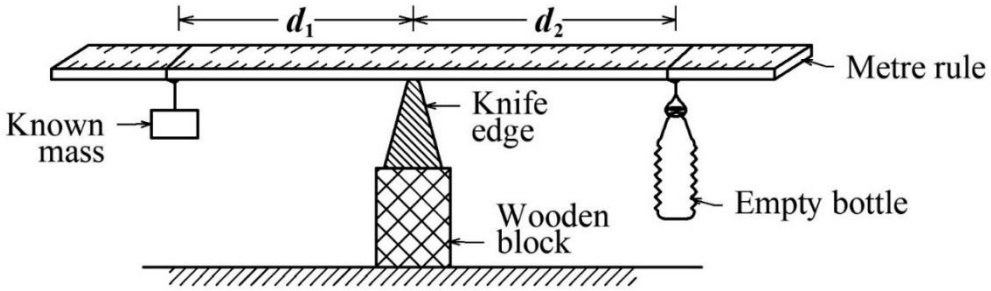

Fig. 1

✓ Other experimental set ups may be used.

Item 2

A student complained about pain in the eyes and could not see nearby objects clearly. After visiting a hospital, a doctor recommended that the student uses spectacles with a lens of focal length 10 cm. The student visited an eyeglass shop, presented the doctor's prescription/report and bought spectacles. The student, however felt uncomfortable while using the spectacles and the problem persisted.

Task:

You are provided with lens, **X** that has same properties with that of the lens in the spectacles a student bought. Verify the accuracy of the lens in the spectacles the student bought.

Hint:

✓

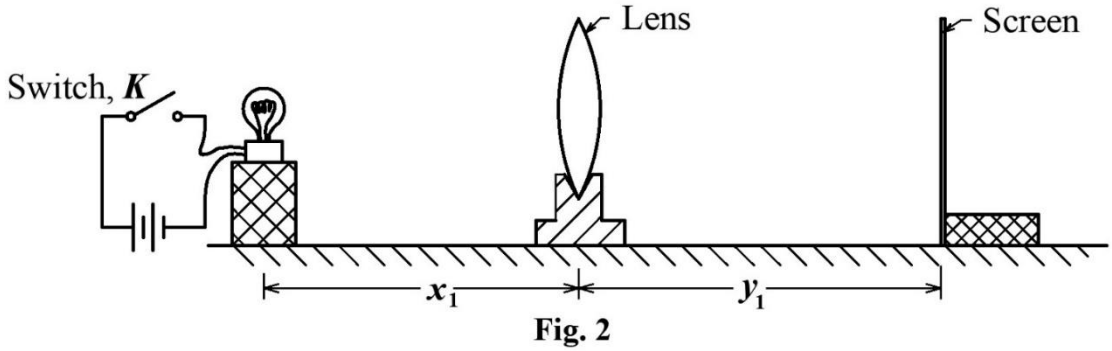

Fig. 2

✓ Other experimental set ups may be used.

END